


AR41

# Motorola annual report 1971



"The Motorola  
Executive Institute  
is an ideal  
that has  
worked"



The Motorola Executive Institute is an ideal that has worked. Operating at Vail, Arizona for its four formative years, it has validated our confidence in applying the highest standards of education and evaluation to executive development.

Our move to the campus here at Oracle is an act of re-affirmation and renewal. At the same time we are provided the opportunity to refine our ideal and rededicate ourselves to it . . .

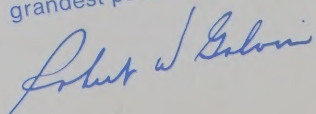
To these ends, I am pleased to dedicate the new Motorola Executive Institute to leadership . . . a characteristic which reveals many paradoxes when analyzed. When one is vested with the role of the leader, he inherits more freedom, yet . . . a balancing group of responsibilities impose on his freedom . . .

For one to lead implies that others follow. But is the leader not a better follower, as he learns more quickly and surely from the past, selects the correct advice and trends, chooses the simpler work patterns, and combines the best of other leaders? . . . To lead well presumes the ability to follow smartly.

Because a leader is human and fallible, his leadership is in one sense finite — constrained by his mortality and his imperfections. On the other hand, his influence is almost limitless. He can spread hope, lend courage, kindle confidence, impart knowledge, give heart, instill spirit, display vision, set direction and call for action today and each of his tomorrows . . . a finite man with an apparent infinite influence.

. . . Dedication is a private, modest, momentary act. But where will it lead? Will the leadership it stimulates, if only in a few, resound bounteously beyond our imagination?

This — the modesty of our act and possible grandeur of its effect — would be the grandest paradox of all.



This excerpt was taken from a message by Chairman Robert W. Galvin at the dedication of the new Motorola Executive Institute campus at Oracle, Arizona, in July, 1971. A full text of the address is available from the public relations department at the address shown on the back cover.





(dollar amounts in thousands except per share data)      **1971**                      **1970**

Sales and Other Revenues	\$ 926,593	\$ 796,419
Income Before Federal and Foreign Taxes	62,055	51,813*
% to Sales	6.70%	6.51%
Federal and Foreign Income Taxes	30,305	26,150*
Earnings	31,750	25,663*
Per Share of Capital Stock	2.37	1.93*
Non-Recurring Charge Net of Taxes	—	1,422
Capital Expenditures	31,977	41,724
Depreciation	27,239	24,508
Working Capital	247,579	222,117
Current Ratio	2.22	2.39
Shareholders' Equity	375,897	344,085
Weighted Average Shares Outstanding	13,410,794	13,324,759
Book Value Per Share	27.88	25.79
Yearend Employment (Approx.)	49,000**	37,000**

\* Excludes non-recurring charge from discontinuance of color TV picture tube operation.

\*\* Yearend 1970 adjusted to include employees of Motorola Israel Ltd. Yearend 1971 also includes employees of Autovox S.p.A. Both are majority owned subsidiaries.

**Annual Meeting** The annual meeting will be held on Monday, May 1, 1972. A notice of the meeting, together with a form of proxy and a proxy statement, will be mailed to shareholders on or about March 30, 1972, at which time proxies will be solicited by management.

**Transfer Agents** Harris Trust and Savings Bank, 111 W. Monroe St., Chicago, Illinois 60690

First National City Bank, 111 Wall St., New York, New York 10015

**Registrars** Continental Illinois National Bank and Trust Company of Chicago, 231 S. LaSalle St., Chicago, Illinois 60690

Irving Trust Company, 1 Wall St., New York, New York 10015

## Covers

(Front Cover) The ascending path to this modern classroom complex symbolizes the careers of many executive students who have and will attend the Motorola Executive Institute. (Back) The Arizona desert provides a serene setting for the institute campus which is comprised of an administration building (right), student quarters (center), classroom complex (upper left), and student union and dining hall (lower left).

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to our  
shareholders  
and friends

Record sales were attained in 1971, increasing 16 per cent to \$926,592,871. Earnings increased 24 per cent to \$31,749,944 or \$2.37 per share compared to \$1.93 in 1970, before a 1970 extraordinary expense of \$1,422,465 (11 cents per share). The 1971 earnings include 7 cents per share realized as a gain from the translation of certain foreign balances to current exchange rates.

These results were generally consistent with our expectations of a slowly improving economy during 1971 as noted in last year's report. Once again, our diversification in electronics was a benefit.

Semiconductor division sales were approximately the same as in 1970, while earnings were somewhat lower, reflecting reduced international volume, price erosion and certain product mix problems. The communications division achieved record sales, up 10 per cent, while its earnings growth moderated primarily due to unusually large expenditures for new product development, investments in additional marketing and sales capability, and startup costs at the Fort Lauderdale facility.

The consumer division turned in an excellent performance by substantially increasing sales and returning to a significant profit position. Record color television unit sales, distributor to dealer, increased 70 per cent over 1970, compared with a domestic industry increase of 28 per cent.

The automotive division achieved record sales and considerably increased earnings and margins over 1970. These results were due, in part, to an increase in car sales and to consumer preference for more sophisticated car radios. The government division continued its com-

mendable performance with record earnings on moderately increased sales, despite reduced government spending. New order bookings in 1971 for advanced technology equipment and systems place the division in an excellent position going into 1972.

#### **Financial Matters**

The strong financial position of the company is exemplified by a current ratio of \$2.22 of current assets to \$1 of current liabilities. Long-term debt is at 15 per cent of long-term debt plus equity.

Assuming continued government limitations on direct foreign investment for at least the next two years, plans call for overseas growth continuing to be financed primarily with Eurodollars. In early March 1972, a Motorola subsidiary sold \$25 million of 8 per cent guaranteed Euro-dollar debentures, due in 1987, callable beginning in 1977.

Capital expenditures totaled \$32 million in 1971 and are expected to approximate \$40 million in 1972 to provide for continued growth, both foreign and domestic.

#### **Research and Development**

Expenditures for research, product engineering and development programs were \$65 million, about the same as 1970. An increase is planned in 1972.

#### **Organization and Management**

Appropriately, the theme of this annual report is *MANAGEMENT*.

As first announced in March 1969, Elmer H. Wavering will retire as vice chairman and chief operating officer at the time of the May 1972 shareholders' meeting, after completing 41 years of service with the company and upon reaching his 65th year. He will remain a member of the board of directors. As also announced in 1969, William J. Weisz, now president and assistant chief operating officer, will

become chief operating officer upon Mr. Wavering's retirement.

The quality, depth and organization of management are key elements in the growth of an enterprise. After 43 years, Motorola has reached an annual sales level approaching one billion dollars. Half of this sales increase occurred over the past seven years. As this growth transpired, many changes in organization took place matching the talents of available executives with the ever-increasing size and complexity of the total managerial task. We have continued to place decision-making authority at the lowest practical level, while keeping each executive's span of responsibility within manageable proportions. Our strong emphasis on management development has enabled us to make these past organizational changes which in turn further contributed to the development of our people.

As Motorola nears its first billion dollar milestone, and as we see the opportunity to reach additional similar milestones with increasing frequency, we have devoted, over the past year, much thought and attention to fashioning a new management structure which properly postures the corporation to seize upon the opportunities and challenges which the future holds. The result is a comprehensive organization change announced in February 1972.

This change, which is detailed in the organization section of this report, is aimed at achieving the following objectives:

Place strong leadership in the most influential positions and make the best possible use of individual talents.

Elevate more key officers to senior positions so as to effectively reduce the span of control of the Chairman/President's office.

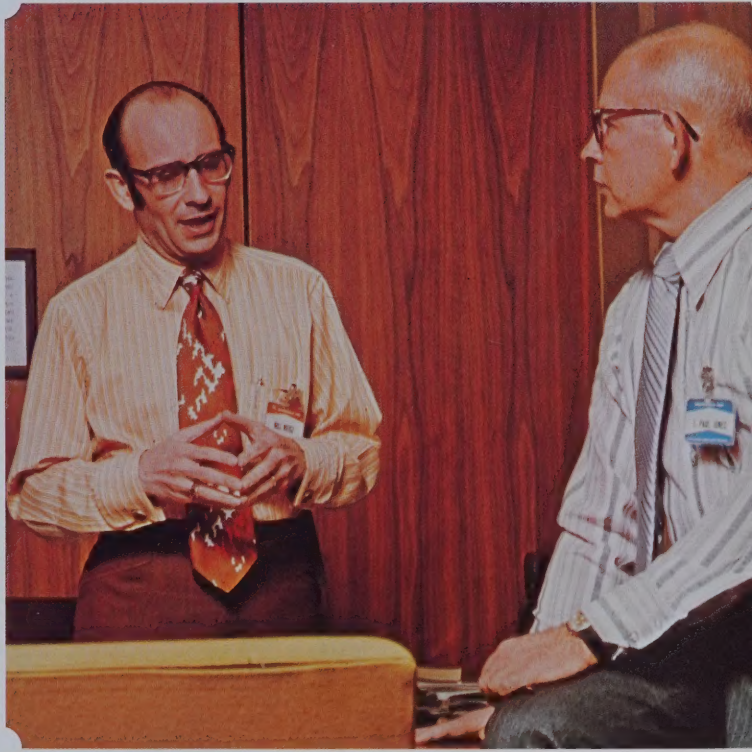
Permit more time at the top for corporate strategy, long-range planning,



Robert W. Galvin, chairman and chief executive officer; and Homer L. Marrs, vice president and general manager of equipment divisions



Elmer H. Wavering, vice chairman and chief operating officer; Walter B. Scott, vice president and director of manufacturing and facilities; Vincent J. Rauner, manager of patent department; and Allen H. Center, vice president of public relations



William J. Weisz, president and assistant chief operating officer; and J. Paul Jones, vice president and director of corporate staff



people evaluation, and management development.

Establish a new ventures activity to lead Motorola's new business explorations.

Provide broad experience for more executives to train for later top assignments.

Strengthen a corporate staff whose purpose is to conceive, stimulate, and challenge all the corporation's activities.

Rotate top executives between line and staff positions, thereby broadening their experience and understanding.

Create new opportunities for increased delegation of responsibilities in a chain-reaction of promotions.

In these changes we see a practical resolution of our organizational needs for the immediate future. We also recognize that other progressive changes are inevitable in the years to come. The new pattern has been composed not only with today in mind, but with a look to those later years as well.

Dr. Daniel E. Noble will not stand for reelection as a director at the 1972 shareholders' meeting, but will continue as chairman of the Motorola science advisory board. In recognition of his outstanding contributions to the company, we will propose that he be named Director Emeritus.

In May 1971, vice president J. Paul Jones, then general manager of the government electronics division and now director of corporate staff, was elected to the board of directors.

In June 1971, Donald R. Jones, then director of finance of the communications division, was elected treasurer of the corporation.

Also in mid-'71, in order to give Motorola's burgeoning multinational activities, which serve the increasing needs of the markets

of the world, additional and intensified senior corporate overview and direction, a corporate office of multinational operations was established. Levy Katzir, until then managing director of Motorola Israel, Ltd., was named director.

On January 1, 1972, Jack Germain and Joseph F. Miller, Jr. were elected vice presidents of the corporation. Their communications division responsibilities are detailed elsewhere in this report.

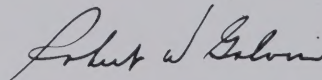
On February 22, 1972, Kenneth M. Piper, 65, retired as vice president of human relations, after 22 years of commendable and deeply appreciated service. He will continue with the company as assistant to the chairman, handling special projects. He was succeeded by Benjamin W. Borne, a man with considerable experience in industrial relations.

#### **Outlook**

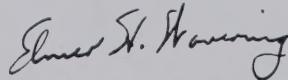
Our current estimates are for increased sales and increased earnings for 1972 in all of our divisions. While there remains uncertainty regarding the international economy, we do expect the domestic economy to continue the improvement which began in late 1971.

We acknowledge our sincere appreciation for the many and important contributions of our associates.

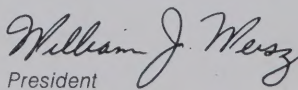
For the Board of Directors



*Chairman of the Board*



*Vice Chairman of the Board*



*President*

**New Ventures** In order to focus a senior management responsibility on Motorola's new business explorations, a new ventures activity has been established, reporting directly to the Chairman/President's office and headed by vice president Stephen L. Levy, formerly general manager of the semiconductor products division. The following businesses, units and departments now are, or will be, under his cognizance:

New ventures laboratories and marketing offices in Chicago and Phoenix.

The American Regitel Corp., producers of point-of-sale credit systems and alpha-numeric printers, based in San Carlos, California, with which company Motorola has a contract to acquire a majority interest subject to fulfillment of certain conditions.

An acquisitions office.

The education and training products unit, which markets electronic video recording (EVR) TELEPLAYER equipment and a variety of cassette program material to the business-industry and institutional markets.

The institutional electronics unit, which supplies special television and related communications equipment and services to the hotel-motel industries. A portion of this business serving the hospital market has been integrated into the communications division.

Certain additional information processing hardware and software businesses which are being explored.

**Corporate Staff** In recent years, Motorola has moved steadily in the direction of making effective use of a broadly skilled corporate staff. Corporate offices of

March 20, 1972



John T. Hickey (standing), vice president for finance and secretary; Lewis D. Spencer, vice president and general attorney; John A. Hubeny, vice president and controller; Earl R. Gomersall, corporate director of information systems; and Donald R. Jones, treasurer

manufacturing and marketing were established in 1967 and 1969, respectively. The establishment of the senior executive position of director of corporate staff moves this concept forward with increased vigor, and also provides another senior position to help oversee the affairs of the entire company.

Vice president J. Paul Jones, formerly general manager of the government electronics division, has been designated as director of corporate staff, and directly reports to the Chairman/President's office. Offices of engineering, manufacturing, marketing, planning, and public relations will comprise the corporate staff which will serve and support as well as challenge and monitor all activities of the company.

Finance, human relations, and multinational operations staff groups continue to report directly to the Chairman/President's office because of the overriding and pervasive importance of finance, because of Motorola's non-union status and personal emphasis on people affairs, and because of the major effort underway as Motorola moves to a multinational posture.

**Divisions** Vice president Homer L. Marrs, formerly general manager of the communications division, has been designated general manager, equipment divisions. The general managers of the communications, consumer products, automotive products, and government electronics divisions report to Mr. Marrs.

Grouping of the four equipment divisions, while leaving the semiconductor products division as a single entity, recognizes the essential difference in technology and processing, that the one serves each of the other four, and that our outside semiconductor customers rightfully expect a clear separation of the semiconductor products division from the equipment divisions, which are competitors of some of our semiconductor customers.

Stephen L. Levy, vice president for new ventures



Kenneth M. Piper (right), former vice president for human relations; and William A. Mitchell, director of human relations



Dr. William J. Bakrow (right), president of Motorola Executive Institute; James D. Burge, manager of executive resources; and Dr. Paul C. Baker, director of human resources



Lloyd W. Singer, director of education and training products unit; and Si H. Stern, director of marketing for institutional electronics unit



Also reporting to Mr. Marrs is the applied systems unit, which offers systems, primarily utilizing the products or skills of the equipment divisions, to the environmental control, security, and surveillance, and urban/transportation markets.

To fill the vacancy created by Mr. Marrs' assignment, vice president John F. Mitchell, formerly assistant general manager of the *communications division* has been named general manager. Vice president Carl E. Lindholm was moved from director of product operations to assistant general manager.

Ralph W. Elsner, vice president and assistant general manager of the *government electronics division*, replaces J. Paul Jones as general manager. Robert Solem, director of communications operations, becomes assistant general manager.

Thomas J. Connors, formerly corporate staff vice president for marketing and, earlier, director of marketing for the *semiconductor products division*, has replaced Mr. Levy as general manager of the division and reports to the Chairman/President's office.



Carl P. Nierzwicki, director of applied systems unit; R. James Harring, director of planning; and Levy Katzir, corporate director of multinational operations

**Operating Committee** Under the chairmanship of William J. Weisz, president, an operating committee has been formed to augment communications, coordination, and planning across the corporation. The initially designated members of this committee are: Thomas J. Connors, vice president and general manager of semiconductor products division; John T. Hickey, vice president for finance and secretary; J. Paul Jones, vice president and director of corporate staff; Stephen L. Levy, vice president for new ventures; and Homer L. Marrs, vice president and general manager of equipment divisions.

Other division managers and/or key corporate staff members will be called upon to serve on this committee from time to time.



**Motorola Executive Institute** Delegation of responsibility to increasingly greater numbers of executives is only possible because of Motorola's success, over the years, in developing the managerial talents of its people. Elsewhere in this report is indicated the age and years of Motorola experience of the company's officers. In discussing organization, growth, and the future, it seems appropriate to comment on a proven concept of management development which augurs well for the future of the corporation and its depth of executive talent.

Essentially, the role of the institute is to provide an upper-middle to top level manager the breadth of vision necessary for a key management role. Also, the four-week intensive program of residence, in groups of 16, on the institute campus at Oracle, Arizona, serves as a period of self-renewal which generates an awareness of the complexities of today's business environment and stimulates a desire in the executive to continue this broadening experience long after he has matriculated.

Also significant is a written evaluation of each participant, which is a forecast of his promotability as well as an analysis of basic managerial attributes. This is done through a peer evaluation where each participant comprehensively rates all other participants in his group, combined with the professional evaluation by the staff psychologist and the results of specifically prepared tests.

The curriculum focuses on the manager and his relations with the corporation, management groups, the free enterprise system, and the technological, social, and political environment of business.

Since the first session in June 1967, some 373 Motorola executives have graduated.

In 1971, sales volume was up by more than 10 per cent over last year. New order input ran 20 per cent ahead of last year and order backlog at yearend was the highest ever.

Earnings advanced at a lesser rate primarily due to unusually large expenditures for new product development, expanding marketing and sales capability, and startup costs at the Fort Lauderdale facility.

The division introduced a number of new products and system concepts in 1971, and an additional number will be announced in early 1972. The major share of these products and systems will have broad market and dollar impact on the division's performance as it continues to maintain a strong leadership position in the personal and mobile communications industry.

A new command and control concept helps conserve radio spectrum by utilizing advanced digital signaling techniques and computerized information handling systems. The dispatcher can automatically locate, identify and determine the status of each mobile radio without voice contact. These systems eliminate many other manual tasks of the dispatcher and mobile operators, resulting in reduced response time and maximum utilization of manpower and facilities.

The division's new pleasure boat unit, the TRITON two-way FM radio-telephone, represents Motorola's entry into the pleasure boat market for the first time. This radio offers the same rugged reliability required in commercial applications. Initial orders exceeded expectations, and shipments of the TRITON radio are scheduled to begin in the first quarter of 1972. The radios will be sold through a dealer organization as the division broadens its distributional base.

A highway emergency radio system, MOTORCALL, was introduced which will



John F. Mitchell (right), vice president and general manager; and Paul N. McGough, director of personnel



offer aid to the stranded motorist. When in need of assistance, the motorist opens the door of a call box located along the highway, picks up the handset and is in immediate contact with a radio dispatcher.

The new PAGEBOY II radio pager, utilizing monolithic integrated circuits, is small and lightweight measuring only 4.8 cubic inches and weighing 3.9 ounces. This pocket-size pager is available with these optional features: memory call, group call, sub-audible paging, high-volume paging, and tone only, voice only or both.

Among the other product introductions during 1971 was the MICOR Systems 90 radio accessory group, which allows the radio user to select, and add on to, his two-way radio system simply, without paying costly custom design charges. Complementing the portable two-way product line was the introduction of the HANDI-COM portable series, combining low cost with high reliability.

Increased emphasis on public safety, transportation, and security in the industrial and general business markets, created new demands for paging equipment, CCTV systems, mobile and portable two-way radios, and remote control systems.

New Motorola communications systems were installed in every state during the year. New York and Chicago contracted for extensive systems to expand and update their police communications systems. San Diego Transit Corporation in California and the Grand Trunk Railroad in Detroit contracted for large transportation communications systems.

During the Southern California earthquake in February, 1971, Motorola's HEAR (Hospital Emergency Administrative Radio) system provided reliable communications in the San Fernando Valley. By using the HEAR system, police, fire and medical officials were in constant com-

munications throughout the crucial period. The system was invaluable for coordinating the rescue and removal of victims, finding beds for the injured and requisitioning supplies from other hospitals in the area.

By yearend, the 240,000 square foot plant in Fort Lauderdale approached full operation. The 110,000 square foot administration building, currently under construction, is scheduled for completion in the second quarter of 1972.

The Federal Communications Commission is studying the possibility of modifying certain restrictions on the 470-512 MHz UHF TV frequencies made available to the land mobile services. FCC Docket 18262, which allocated frequencies to wireline telephone companies in the 900 MHz band, has been the subject of technical and marketing studies during the last quarter of 1971.

To insure continuation of the division's growth, a reorganization of management was implemented. Worldwide marketing and distribution resources were consolidated under one executive. A major organization was established to pursue development of large systems opportunities. To provide maximum flexibility in the development and manufacture of mobile, portable and base station products, these product operations and the international subsidiaries and joint ventures were consolidated under one manager.

Sales in European markets more than tripled over 1970, providing a firmer base for expansion in 1972. Other overseas operations also continued to broaden, highlighted by the establishment of a distribution capability in Australia.

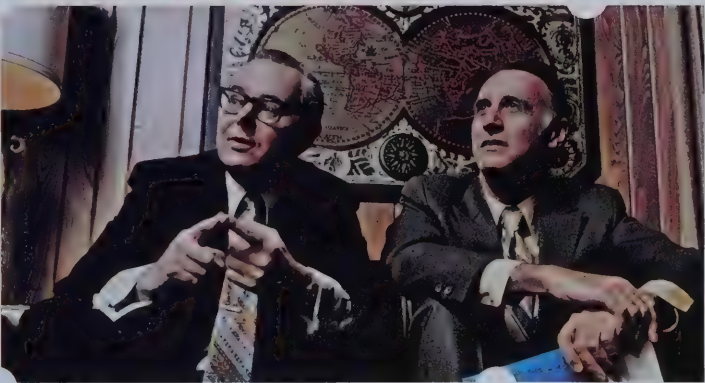
With the high order backlog and increased order input in 1971 and new market and product introductions, the division expects increased sales and earnings in 1972, both domestically and internationally.



Carl E. Lindholm (right), vice president and assistant general manager; and Claude G. Davis, group operations manager for portable products . . . inspecting PAGEBOY II assembly



Martin Cooper (right), vice president and director of systems operations; and Charles H. Willyard, group operations manager for systems products . . . discussing command and control system



Jack Germain, vice president and director of product operations; and Arnold Brenner, group product manager for mobile products . . . examining solid state MICOR unit

(Bottom) H. E. James Finke (right), divisional managing director of Europe . . . checking communications for Red Cross vehicle in Weisbaden, Germany

(Center) Robert N. Swift (right), vice president and director of marketing; and Joseph F. Miller, Jr., vice president and general manager of domestic distribution



Semiconductor industry sales in the U. S. improved with each quarter of 1971, indicating that the domestic industry is beginning a resurgence. However, since the year began with a relatively low sales level, total domestic sales for the industry were still down by approximately three per cent from the previous year.

In the world market, semiconductor industry sales were down about four per cent for the year. In Europe, industry sales were estimated to be down approximately ten per cent, while in the Asia/Pacific area they were up by only about two per cent, reflecting the continuation of general business softness in those two areas.

The year proved to be better for Motorola's semiconductor products division than for most of the industry. Sales were approximately the same as in 1970, enabling the division to capture the largest share of the total market in its 16-year history. Earnings were lower than in the previous year, due to reduced international volume, price erosion and certain product mix problems.

During 1971, some of the major markets served by the semiconductor industry showed signs of recovery while others did not. The computer market and the military/aerospace market remained relatively stable. The commercial/industrial market registered a slight growth for the year, while the consumer market grew by over 20 per cent. This recovery pattern is creating a change in the "mix" of semiconductors currently being shipped, with low-cost, high-volume plastic encapsulated devices becoming more predominant.

Several organizational changes were made during the year to improve the division's ability to manage its worldwide organization, and to prepare senior managers for increased responsibilities. The operations managers of bipolar integrated circuits and discrete products

exchanged positions so that each would gain managerial backgrounds in both major areas of the business. The MOS (metal oxide semiconductor) integrated circuits operation became a separate function permitting particular emphasis on this rapidly growing segment of the market. In addition, staff directors of manufacturing, quality control, and marketing and engineering were named to afford the division greater control and to provide better measurement and reporting systems.

The division's worldwide production complex continued to expand in 1971, preparing for orderly future growth. In June, a 40,000 square foot plant in Guadalajara, Mexico was officially dedicated and is currently fully staffed, equipped and operational. In addition, construction of a Motorola-owned plant in East Kilbride, Scotland began. This 67,000 square foot plant will replace the leased, 13,000 square foot facility currently in use.

Continuing the pattern established in the formative years of the division, new manufacturing processes, methods and equipment were put into operation. Automation was applied to many areas for the first time. For example, a new, fully computerized epitaxial growth system was put on-stream at the division's Phoenix plant. This system will both improve yields and lower costs in this basic but very important step in silicon wafer production.

In the discrete device area, two new laser scribes were added. These scribes separate individual chips from silicon wafers. An automatic laser was also added during the year for use in the manufacture of hybrid devices which require a trimming, or adjustment of various components. The laser trims these components with an accuracy and in a manner formerly unattainable.

Other areas where automation played an



Thomas J. Connors, vice president and general manager



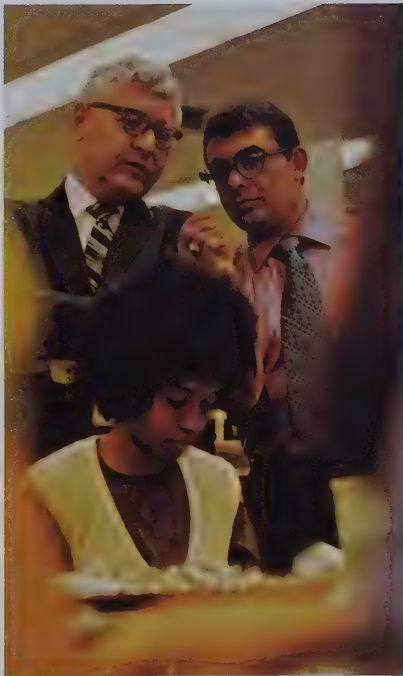
important role were in power transistor production and wafer processing.

Three product groups received primary emphasis during 1971: MOS integrated circuits; MECL (emitter coupled logic) integrated circuits; and optoelectronic devices.

An entire series of MOS devices was introduced from random access memories (RAM's) to the first standard CMOS (complementary MOS) integrated circuits for use in watch circuits and portable equipment. In the fourth quarter alone, 14 new MOS products were introduced. The MECL 10,000 series of integrated circuits for high-speed computer applications was introduced and is expected to become the industry standard for this logic family.

Continuing breakthroughs in material processing and production have resulted in a broad line of standard optical devices. During 1971, major emphasis was placed on developing the division's production capability. To date, about 50 standard optoelectronic components and numeric readout devices have been made available in quantity.

The outlook is for continuing industry recovery during 1972. Trends indicate the industry dollar sales will increase by 6 to 8 per cent. Motorola again expects to exceed the industry growth rate, further strengthening the division's position in the semiconductor industry.



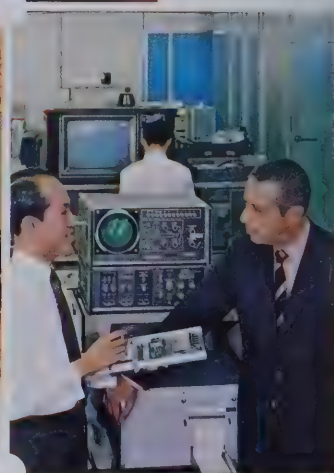
John R. Welty, vice president and assistant general manager; and Gino Ori, operations manager for rectifier products . . . inspecting automotive rectifier



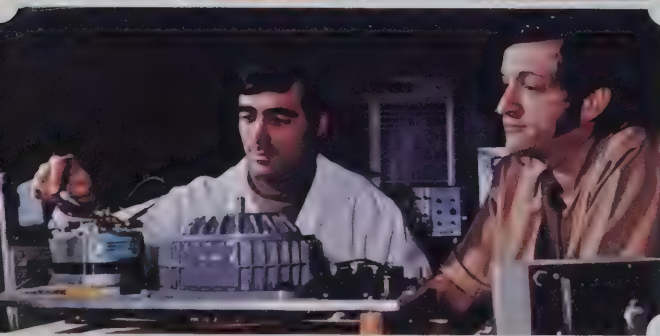
John C. Haenichen, vice president and director of operations for metal oxide semiconductors . . . explaining MOS circuits on silicon wafer



Patrick D. Lynch, vice president and director of operations for bipolar integrated circuits; and Max H. Bloemhard, technical specialist for linear programming . . . examining IC in automated testing area



Ernest H. Shrenzel (right), managing director of Asia/Pacific area; and Kazuo Suzuki, manager of applications engineering of Motorola Semiconductors Japan Ltd., a marketing subsidiary



(Bottom) Robert R. Heikes (right), divisional managing director of Europe; and Russo Albert, technician . . . applications laboratory in Geneva, Switzerland

(Center) Christian J. Goodman (right), vice president and staff director of marketing; and Rod O'Connor, director of marketing for U.S. and Canada . . . discussing semiconductors for consumer products

Richard P. Abraham, director of operations for discrete products; and Richard L. Diddams, senior product development engineer . . . checking laser trimmer



## consumer products division

The consumer products division performed excellently in 1971. Running at a rate of improvement over 1970 far above that of the total industry, the division established a Motorola record for color television unit sales, distributor to dealer, with an increase of 70 per cent over the previous year. This compared with the domestic industry increasing 28 per cent. Motorola's previous record year for color TV unit sales was 1966. Thus, the division substantially increased its color television share-of-market.

This large increase in color TV sales, plus the results of an extensive cost reduction program initiated in 1970, enabled the division to show a significant profit for the year. Additionally, a major improvement in asset turnover was accomplished by better management of inventories and receivables.

Motorola's color TV sales started the year briskly, due to the Quasar marketing strategy and retailer and consumer acceptance of Insta-Matic color TV tuning control. A highly demonstrable consumer benefit, Insta-Matic features one button which automatically balances color hue, intensity, brightness, contrast and also activates automatic fine tuning.

Additional promotional support was provided for Quasar color TV during the industry's usual midyear slump in color TV sales. This continuity of advertising made an important contribution to Motorola's rise in the marketplace. The consumer benefits of the Quasar system, including Insta-Matic tuning control, reliability of solid state componentry and easy-to-service plug-in mini-circuits, are recognized by dealers and consumers in growing numbers.

Demand for Motorola television required an expansion in product output which, for Quasar color television, meant doubling the 1970 rate. Production lines were

installed in Quincy to supplement Franklin Park. "Feeder" facilities in Pontiac, Illinois and Chicago increased subassembly production to support stepped up final assembly operations. A color TV assembly plant was opened near Toronto, Ontario, Canada to support increased sales in the Canadian market.

Black and white TV sales were hampered in the first half by product shortages in certain popular screen sizes. However, during the second half, sales of this product were substantial and pushed results for the year ahead of 1970. The new Taiwan assembly plant, opened in January, was able to deliver increasing quantities of small screen monochrome models in the second half to supplement production at Quincy, Illinois.

The division introduced its first 4-channel sound products for the home in 1971 and was pleased with buying response to these initial entries in an exciting and promising sector of the audio market.

Substantial progress was made in strengthening the wholesale distributor and retail account structure. This contributed importantly to the division's successful year. New approaches to distribution were initiated in several markets where weakness in sales performance became apparent.

The division will no longer market portable and table radios, portable phonographs and portable tape players, once current factory inventories are depleted. Changes in merchandising patterns over the past several years have made it increasingly difficult to achieve a profit on these products, which have represented only a small percentage of the division's dollar sales. Motorola's main thrust will thereby be in the higher technology areas of television and sophisticated audio products which are more important to our distributors and their dealers.



Edward P. Reavey, Jr. (center), vice president and general manager; Charles W. Kepler, assistant to general manager for planning and control; and Lee J. Gualano, director of business management



The Motorola Consumer Service and Satisfaction program lengthened its reach and was cited on a number of occasions for its efforts to better serve the buying public. Color TV product guarantees are stated in simple terms and labeled on the product for ready reference.

A group of college students was given summer employment as aides to certain Motorola distributors in contacting consumers to verify satisfaction with the product. These activities reflect the division's total dedication to a continual search for better ways to serve the consumer.

To capitalize on the gains of 1971 and to provide for future growth in sales and profit, the division management staff was restructured at yearend.

The new alignment reduced the number of functions reporting directly to the division manager's office. New positions of assistant to the general manager for planning and controls and director of business management were established. Also, other major managers acquired additional skills and services needed to provide more efficient and effective performance. Key planning centers were established within each of the major departments. All executive promotions in the realignment were made from within the ranks and opened the door to further personal development of many people.

For 1972, the division estimates that domestic industry color TV distributor unit sales will rise about five per cent over the prior year to some 6.5 million sets. The division's goal is for sales to increase at a rate greater than industry, with another important gain in earnings and share of market.



Herbert D. DeBorde, vice president for operations; and H. Warren Gieffers, director of manufacturing . . . inspecting Quasar "works in a drawer"



(Bottom) Richard A. Kraft, director of product development; James E. Stewart, director of international operations; and Herbert J. Zeller, director of industrial design . . . discussing monochrome TV

(Center) Robert C. Warren, director of marketing; and R. Douglass Cooper, Jr., president of R. Cooper, Jr. Inc., a distributor . . . explaining Quasar features



The government electronics division continued its commendable performance with sales increasing slightly, despite decreased spending by its two major customers, Department of Defense (DOD) and National Aeronautics and Space Administration (NASA). Earnings also increased in 1971 over 1970 and set a new high, breaking the record level set just last year. While yearend dollar backlog was somewhat lower than at the end of 1970, new order bookings for advanced technology equipment and systems during 1971 have placed the division in a strong position going into the new year, and dollar backlog has substantially increased in early 1972.

International operations continued to increase their contribution to sales and earnings during 1971. New order bookings and sales to international customers were up approximately 23 per cent.

Two important new contracts were won, complementing equipment being developed under DOD's triservice Integrated Target Control System (ITCS) contract received in 1970. This work, being done by the radar operations, includes an augmentation subsystem for the Air Force high altitude supersonic target HAST drone and a vector miss-distance indicator subsystem for a variety of target drones. These two contracts, along with developments under the ITCS program, place the division in an advantageous position in

the growing remotely piloted vehicle electronics market.

The communications operations won a significant contract from the Navy for fleet broadcast receivers. These receivers will notably increase the Navy's ability to communicate with its fleets throughout the world's oceans via communications satellites. Though still in the development stage, this project should lead to worthwhile production.

In space communications, the division continued to receive many contract awards for subsystems on unmanned space satellites, including the radio frequency transmitter receiver, the X-band and the flight data subsystems of the Mariner/Venus/Mercury spacecraft, and the radio relay subsystem of the Viking Orbiter, the spacecraft which will go into orbit around Mars in 1975. Motorola was also selected for two other subsystems for the Viking Orbiter program but negotiations were not complete at yearend.

The tactical electronics operation continued its excellent work in the highly classified countermeasures area, delivering flight test hardware ahead of schedule. The outstanding performance of this equipment during Air Force flight tests has resulted in a preproduction contract and in Air Force investigation of the application of the same kind of advanced countermeasures technique to tactical aircraft.

In the fuzing area, the division received several new development contracts to apply state-of-the-art techniques to a variety of ordnance devices from free-fall bombs to artillery shells to small caliber projectiles.

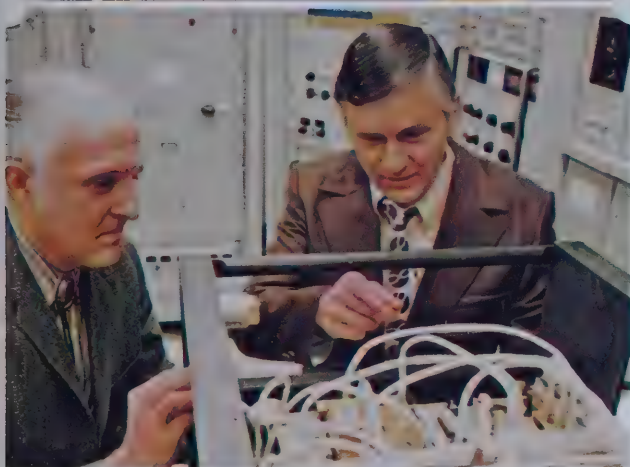
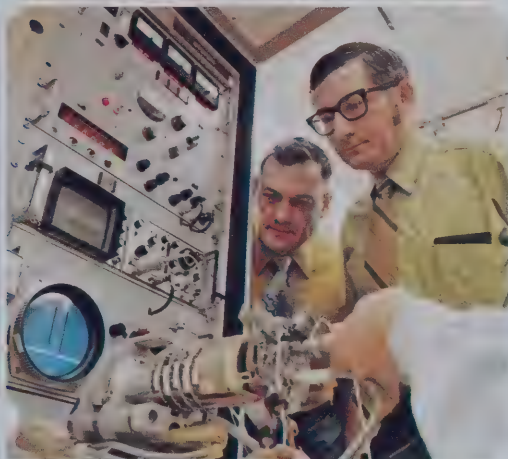
The division continued its strategy of pursuing state-of-the-art development contracts in a diversity of selected technical areas, thereby building a solid foundation for the future.



Ralph W. Elsner, vice president and general manager; and Harry H. Mottek, director of international operations . . . examining range positioning system transponder



Philip C. Wright (right), director of operations support; and Wayne A. Stoltz, group leader of transponder test section . . . inspecting automated control and landing system test equipment



Robert J. Solem (right), assistant general manager; and Kenneth W. Porter, deputy manager of communications engineering department . . . checking Mariner spaceborne communications equipment test



(Center) Arnold R. Sabel (right), director of tactical electronics operations; and James R. McEown, program manager . . . testing ordnance device

(Bottom) Alfred S. Hume (right), director of radar operations; and David M. Barrow, manager of integration and test, ITCS program . . . discussing drone command and control station



Sales of the automotive products division, excluding the 52 per cent interest recently acquired in Autovox S.p.A. in Rome, Italy, rose more than 25 per cent to a new record. Dollar earnings and margins increased considerably over 1970. These results reflect, in part, an upswing in car sales and a consumer preference for more sophisticated car radios.

Car radio continues to be the division's major product line. Major original equipment contracts received include 100 per cent of the 1972 car radio requirements for American Motors and the phasing-in of Motorola as the sole outside supplier to Chrysler for the 1972 model year. This will represent approximately a threefold increase in sales to Chrysler as compared to the 1971 model year. The division continues to provide selected models of car radios to Ford, and for Volkswagen, Volvo, and Renault cars sold in the U. S.

The trend towards AM/FM and AM/FM stereo is a significant shift in car radio product mix. FM stereo radios contain about 2½ times the circuitry of conventional AM radios, thus increasing sales dollars. Currently over 15 per cent of

domestic autos produced contain factory installed FM radios.

Original equipment tape player sales increased during 1971 and Motorola will be sole supplier during 1972 for Chrysler, Ford, and American Motors. The division also provides tape players for Volkswagen and Volvo cars in the U. S. During 1972, the division will supply a complete entertainment center for Chrysler which will include AM, FM, FM stereo, and stereo 8-track tape player in one compact package.

Sale of private label tape decks to other equipment manufacturers increased for both 8-track and 4-channel applications.

Motorola-branded aftermarket entertainment product sales showed a substantial upsurge in 1971. Car radio sales increased dramatically. Stereo 8 tape player sales increased at a lesser rate. During the first quarter, the division began shipping 4-channel automotive tape players to distributors. Sales are expected to increase as the market further develops during 1972.

Solid state ignition sales declined due to reduced volume to Outboard Marine Corporation. The division continues to supply 100 per cent of the requirements for Chrysler Outboard Corporation's 2-, 3-, and 4-cylinder engines. Development programs are in progress with major original equipment customers for future ignition systems for automotive, industrial, and snowmobile applications.

Alternator charging system sales set an all time record, with over 250 original equipment customers. The largest single contract is for 100 per cent of American Motors alternator charging system requirements through the 1973 model year. A new electronic concept in brushless alternator systems was marketed during 1971. Initial applications are for high

mileage, heavy duty equipment such as trucks and industrial machinery.

International operations continue to grow. Sales of car radios and tape players produced at the division's subsidiary in England are increasing steadily. Besides the aftermarket, Motorola supplied entertainment products to Chrysler and Volkswagen in the United Kingdom in 1971. In October, the division introduced 4-channel sound during the British Motor Show. The reaction was excellent.

Alps-Motorola, an unconsolidated joint venture company in Japan, achieved record sales and profits. This company manufactures tape players and tape components for worldwide distribution. Currently, about 50 per cent of sales are to original equipment manufacturers in Japan.

In September, the division acquired 52 per cent of the capital shares of Autovox S.p.A., an Italian car radio, tape player, and television set manufacturer. Autovox, with a well-known and respected product line in Europe, provides Motorola a major new capability for competing in the Common Market.

Car radio and tape player sales increased in Canada. During the third quarter, the three millionth car radio was produced in Canada since production began in 1966 at Midland, Ontario. A high percentage of these units are imported into the U. S. under the United States-Canadian Automotive Products Agreement.

Increased international activity is planned in the major free world markets through subsidiaries, joint ventures, and licensee arrangements.

The automotive industry is predicting increased sales in 1972. The outlook for most of the division's markets, domestically and internationally, is favorable. Consequently, the division expects further gains in 1972.

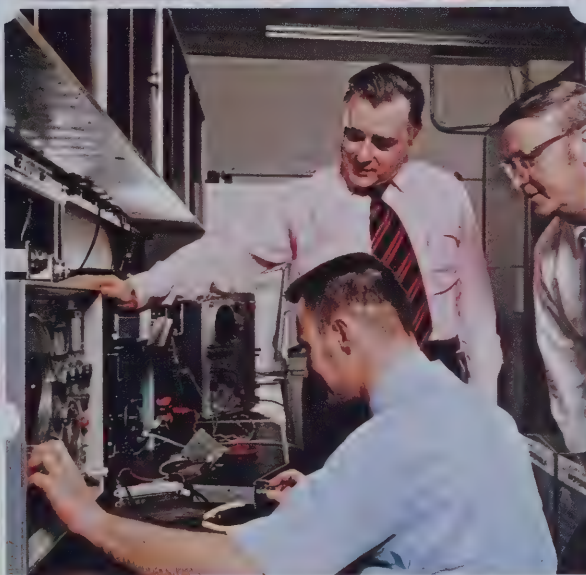
Oscar P. Kusisto, vice president and general manager; and C. J. Gentry, director of marketing for branded automotive sound products . . . discussing Quadraline 4-channel automotive tape player



James A. Torrence (right), vice president and assistant general manager; and A. C. Boss, director of OEM sales and marketing . . . examining Chrysler entertainment center



Warren L. Knauer (center), director of automotive and industrial product operations; and Lawrence H. Jones, general sales manager; and James R. Cherry, product manager of same operations . . . observing brushless alternator test



Fred P. Hill, vice president and director of entertainment products and international operations; Robert A. Wolf, product manager of entertainment products; Ruediger Schmidt (seated), international engineer . . . evaluating car radio produced in England



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Vice President and General Attorney

# consolidated earnings and retained earnings

Years Ended December 31	Motorola, Inc. and Subsidiaries	1971	1970
Sales and other revenues		<u>\$926,592,871</u>	<u>\$796,418,521</u>
Manufacturing and other costs of sales		632,312,505	544,873,333
Selling, service and administrative expense (notes 6 and 7)		196,993,345	165,752,894
Depreciation of plant and equipment (note 3)		27,239,303	24,508,353
Interest and amortization of debenture discount and expense		7,713,483	9,499,231
Minority interest in net earnings of subsidiaries (note 1)		<u>279,291</u>	<u>(28,195)</u>
<b>TOTAL COSTS AND OTHER EXPENSES</b>		<u><b>864,537,927</b></u>	<u><b>744,605,616</b></u>
Income before federal and foreign income taxes and non-recurring charge		62,054,944	51,812,905
Federal and foreign income taxes, net of investment credit of \$554,000 in 1971; \$757,000 in 1970 (note 1)		<u>30,305,000</u>	<u>26,150,000</u>
<b>Earnings from operations</b>		<b>31,749,944</b>	<b>25,662,905</b>
Non-recurring charge from discontinuance of color TV picture tube manufacturing operation, including investment credit, \$491,000, less federal income taxes, \$872,000, and other credits		<u>—</u>	<u>1,422,465</u>
<b>Net earnings</b>		<b>31,749,944</b>	<b>24,240,440</b>
<b>Retained earnings at beginning of year</b>		<b>216,413,651</b>	<b>219,842,193</b>
Less:			
Share for share distribution—par value of 6,666,933 shares transferred to capital stock		<u>—</u>	<u>(20,000,799)</u>
Cash dividends declared (per share: 1971, \$.60; 1970, \$.575 adjusted for share distribution)		<u>(8,058,062)</u>	<u>(7,668,183)</u>
<b>Retained earnings at end of year (notes 1 and 4)</b>		<u><b>\$240,105,533</b></u>	<u><b>\$216,413,651</b></u>
Earnings per weighted average share outstanding during the year:			
From operations		<u><b>\$2.37</b></u>	<u><b>\$1.93</b></u>
Less non-recurring charge		<u>—</u>	<u>(.11)</u>
<b>Net earnings</b>		<u><b>\$2.37</b></u>	<u><b>\$1.82</b></u>

See accompanying notes to consolidated financial statements



as of December 31, Motorola, Inc. and Subsidiaries

ASSETS	1971	1970
Current Assets		
Cash	\$ 19,068,167	\$ 21,223,399
Short-term investments, at cost (approximating market)	4,230,099	6,070,269
Accounts receivable	209,393,410	173,200,309
Allowance for doubtful accounts	(5,945,000)	(5,070,000)
Costs recoverable under United States government contracts, less progress billings	6,983,099	5,695,960
Inventories, at the lower of cost (first-in, first-out) or market	180,314,678	146,263,834
Future income tax benefits (note 2)	19,821,796	18,647,412
Other current assets	17,087,294	15,498,680
TOTAL CURRENT ASSETS	450,953,543	381,529,863
Plant and Equipment, at Cost		
Land	12,750,055	10,684,954
Buildings	146,477,996	136,481,392
Machinery and equipment	150,191,541	136,357,239
Accumulated depreciation (note 3)	(125,200,701)	(108,993,570)
NET PLANT AND EQUIPMENT	184,218,891	174,530,015
Sundry assets, net	11,568,579	13,492,239
	\$646,741,013	\$569,552,117

See accompanying notes to consolidated financial statements

as of December 31, Motorola, Inc. and Subsidiaries

LIABILITIES AND SHAREHOLDERS' EQUITY	1971	1970
Current Liabilities		
Notes payable		
Domestic	\$ 24,950,000	\$ 1,000,000
Foreign	18,851,995	8,642,273
Current maturities of long-term debt (note 4)	3,272,629	23,860,360
Accounts payable	67,327,911	55,746,278
Accrued compensation	17,709,983	14,401,348
Federal and foreign income taxes (note 1)	10,882,920	9,107,289
Other (including withheld) taxes	12,022,580	10,520,406
Contribution to employees' profit sharing funds (note 7)	8,577,119	6,497,968
Product and service warranties	9,754,951	6,701,451
Accrued expenses and other	30,024,472	22,935,504
TOTAL CURRENT LIABILITIES	203,374,560	159,412,877
Long-Term Debt (notes 4 and 9)	63,779,811	65,347,505
Minority Interest in Subsidiaries (note 1)	3,689,389	706,469
Shareholders' Equity		
Capital stock, \$3.00 par value (notes 4 and 5)		
Authorized: 20,000,000 shares		
Outstanding: 1971, 13,480,798 shares; 1970, 13,342,666 shares	40,442,394	40,027,998
Additional paid-in capital (notes 4 and 5)	95,349,326	87,643,617
Retained earnings (notes 1 and 4)	240,105,533	216,413,651
TOTAL SHAREHOLDERS' EQUITY	375,897,253	344,085,266
	\$646,741,013	\$569,552,117

# consolidated earnings and retained earnings

Years Ended December 31	Motorola, Inc. and Subsidiaries	1971	1970
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<b>Net earnings</b>		<b>31,749,944</b>	<b>24,240,440</b>
<b>Retained earnings at beginning of year</b>		<b>216,413,651</b>	<b>219,842,193</b>
Less:			
Share for share distribution—par value of 6,666,933 shares transferred to capital stock		—	(20,000,799)
Cash dividends declared (per share: 1971, \$.60; 1970, \$.575 adjusted for share distribution)		(8,058,062)	(7,668,183)
<b>Retained earnings at end of year (notes 1 and 4)</b>		<b>\$240,105,533</b>	<b>\$216,413,651</b>
Earnings per weighted average share outstanding during the year:			
From operations		\$2.37	\$1.93
Less non-recurring charge		—	(.11)
<b>Net earnings</b>		<b>\$2.37</b>	<b>\$1.82</b>

See accompanying notes to consolidated financial statements



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Vice President and Assistant  
General Manager

consolidated  
changes in financial  
position

Years Ended December 31	Motorola, Inc. and Subsidiaries	1971	1970
<b>Working Capital Provided</b>			
Net earnings before non-recurring charge	\$ 31,749,944	\$ 25,662,905	
Add expenses not requiring outlay of working capital:			
Depreciation (including \$252,645 in non-recurring charge in 1970) (note 3)	27,239,303	24,760,998	
Amortization of deferred debenture discount and expense	632,213	652,471	
Working capital provided from operations, exclusive of non-recurring charge	59,621,460	51,076,374	
Non-recurring charge	—	(1,422,465)	
Disposals of plant and equipment (and tooling, net)	722,096	9,932,022	
Decrease (increase) in sundry assets (exclusive of amortization of deferred debenture discount and expense)	1,291,447	(580,775)	
Increase in long-term debt	4,913,940	1,243,905	
Increase in minority interest in subsidiaries	2,982,920	706,469	
Proceeds from issuance of capital stock	8,120,105	1,378,539	
Total working capital provided	77,651,968	62,334,069	
<b>Working Capital Used</b>			
Additions to plant and equipment (includes net balance of a subsidiary acquired as of August 31, 1971 — \$5,672,781)	37,650,275	41,723,511	
Reduction of long-term debt	6,481,634	26,202,490	
Cash dividends	8,058,062	7,668,183	
Total working capital used	52,189,971	75,594,184	
Increase (decrease) in working capital	\$ 25,461,997	\$ (13,260,115)	
<b>Increase (Decrease) in Components of Working Capital</b>			
Cash	\$ (2,155,232)	\$ 375,968	
Short-term investments	(1,840,170)	(13,633,859)	
Accounts receivable	36,193,101	5,800,633	
Allowance for doubtful accounts	(875,000)	(670,000)	
Cost recoverable under United States Government contracts, less progress billings	1,287,139	(1,608,877)	
Inventories	34,050,844	(7,840,413)	
Future income tax benefits	1,174,384	(19,285)	
Other current assets	1,588,614	3,679,784	
Total current assets	69,423,680	(13,916,049)	
Notes payable	34,159,722	3,305,457	
Current maturities of long-term debt	(20,587,731)	22,448,410	
Accounts payable	11,581,633	(6,435,475)	
Accrued compensation	3,308,635	(4,951,387)	
Federal and foreign income taxes	1,775,631	(5,711,750)	
Other (including withheld) taxes	1,502,174	2,374,083	
Contribution to employees' profit sharing funds	2,079,151	(7,651,247)	
Product and service warranties	3,053,500	90,376	
Accrued expenses and other	7,088,968	(4,124,401)	
Total current liabilities	43,961,683	(655,934)	
Increase (decrease) in working capital	\$ 25,461,997	\$ (13,260,115)	

See accompanying notes to consolidated financial statements

consolidated  
additional paid-in  
capital

Years Ended December 31	Motorola, Inc. and Subsidiaries	1971	1970
Balance at beginning of year	\$ 87,643,617	\$ 86,336,418	
Share option plans (note 5)	6,016,897	1,307,199	
Conversion of 4½ % convertible guaranteed debentures (principal amount \$2,366,000) (note 4)	1,688,812	—	
Balance at end of year	\$ 95,349,326	\$ 87,643,617	

See accompanying notes to consolidated financial statements

accountants' report

The Board of Directors and Shareholders of Motorola, Inc.:

We have examined the consolidated balance sheet of Motorola, Inc. and subsidiaries as of December 31, 1971 and 1970 and the related statements of earnings and retained earnings, additional paid-in capital, and the statement of changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the financial position of Motorola, Inc. and subsidiaries at

December 31, 1971 and 1970 and the results of their operations and changes in financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

PEAT, MARWICK, MITCHELL & CO.

Chicago, Illinois  
February 16, 1972,  
except for Note 9 as to which the date is March 15, 1972



1 The consolidated financial statements include the accounts of the Company and all subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation. The financial statements of foreign subsidiaries were translated at appropriate rates of exchange resulting in net realized gains of \$879,348 in 1971 (1970, \$45,713) and deferred gains of \$272,466 as of December 31, 1971 (1970, \$381,185) which were not realized. Operating accounts were translated generally at exchange rates prevailing during the year.

At December 31, 1971 and 1970 net assets of consolidated operations outside of the United States and Canada aggregated \$49,900,000 and \$40,800,000, respectively.

Export sales of domestic companies and sales and other revenues of operations outside of the United States and Canada were 13% of the consolidated amounts in both 1971 and 1970.

The undistributed earnings of foreign subsidiaries may be subject to domestic income taxes (reduced by foreign tax paid credits, if any) if and when remitted to the parent company. The Company does not contemplate repatriating any of these undistributed earnings in the form of dividends, and accordingly no domestic income tax has been provided.

The consolidated accounts include the 52% interest the Company acquired in Autovox S.p.A. (an Italian corporation) during 1971. The minority interest therein and other minority interest have been set forth as a separate item in the financial statements; the 1970 amounts have been reclassified to conform to the 1971 presentation.

2 Future income tax benefits should result from the deduction from taxable income of reserves which have been provided on the books of the companies but are not yet allowable as deductions in determining income taxes currently payable.

3 Depreciation of plant and equipment is provided on the basis of the estimated useful lives generally by the declining balance method for items acquired subsequent to December 31, 1953 and by the straight-line method for items acquired prior to that date.

4 Long-term debt at December 31 consisted of the following:

	1971	1970
4½% convertible guaranteed debentures due July 1, 1983 (issued outside the United States and Canada)	\$27,634,000	\$30,000,000
4¾% debentures due April 1, 1986 (less \$500,000 debentures held by the company for sinking fund payment)	27,000,000	27,500,000
Revolving credit notes (prevailing prime rate plus ¾%)	—	22,500,000
3¾% and 4¾% notes due in annual installments to 1976	3,000,000	4,000,000
Notes payable (foreign, generally at prevailing prime rates) due in installments to 1981	9,418,440	5,207,865
	<u>67,052,440</u>	<u>89,207,865</u>
Less current maturities, included in current liabilities	3,272,629	23,860,360
Net long-term debt	<u>\$63,779,811</u>	<u>\$65,347,505</u>

The 4½% convertible guaranteed debentures (issued by Motorola International Development Corporation) are convertible into capital stock of Motorola, Inc. at the rate of 12.6 shares for each \$1,000 principal amount, subject to adjustment in certain events, and are guaranteed as to the payment of principal and interest by Motorola, Inc. The debentures are redeemable at various dates at redemption prices reducing from 104½% to 100% of the principal amount thereof. In 1971, \$2,366,000 in debentures were converted into 29,807 shares.

Consolidated retained earnings at December 31 exceeded the amount restricted by loan agreements by \$137,000,000 in 1971 and \$123,000,000 in 1970 and consolidated working capital exceeded the amount required by \$172,579,000 in 1971 and \$147,117,000 in 1970.

See note 9.

- 5 Under the Company's Employee Share Option Plans, shares of capital stock have been made available for option to employees of the Company and certain subsidiaries. Options may be granted at not less than market value, are exercisable one year from date of grant, and expire at the end of five years. Data on share options are summarized as follows:

	1971	1970
Options outstanding beginning of year	\$ 508,170	\$ 564,090
Options granted	124,900	1,000
	<u>633,070</u>	<u>565,090</u>
Less:		
Options exercised	108,325	38,760
Options terminated	9,900	18,160
	<u>118,225</u>	<u>56,920</u>
Options outstanding end of year	514,845	508,170
Shares reserved for possible future options	585,860	700,860
Total shares reserved	<u>1,100,705</u>	<u>1,209,030</u>
Aggregate option price of outstanding options	<u>\$32,819,842</u>	<u>\$28,486,291</u>
Aggregate option price of exercisable options	<u>\$22,148,386</u>	<u>\$28,422,384</u>
Excess of the option price over the par value of shares issued	\$ 5,429,030	\$ 1,307,199
Tax benefit resulting from premature disposal by grantees	<u>\$ 587,867</u>	<u>—</u>

The exercise of outstanding options and conversion of 4½% debentures would not result in a significant dilution of earnings per share.

- 6 An Executive Incentive Plan provides that the Company may reserve up to 4% of its annual consolidated pre-tax earnings (as defined) for the payment of cash incentive awards. Awards are payable generally in equal annual installments over a period of five years and are generally subject to the recipients' continued employment. Reserves of \$1,613,517 and \$1,292,151 representing 4% of defined earnings were provided in 1971 and 1970 respectively for such awards. Awards of \$1,284,020 were made in 1971 (\$1,970,820 in 1970) and

\$2,835,725 was available for awards at December 31, 1971 (\$2,506,228 in 1970).

- 7 The Company and certain subsidiaries have contributory profit sharing plans in which all eligible employees participate. The companies' contributions to the United States, Canadian, and other foreign profit sharing funds, based upon percentages of pre-tax earnings, were \$8,577,119 in 1971 and \$6,497,968 in 1970.

The Company and certain subsidiaries have a voluntary, contributory pension plan. The Company's policy is to fund pension costs accrued, 1971, \$2,577,978; 1970, \$2,120,185. At December 31, 1970, date of the latest actuarial determination, vested benefits were fully funded. In the event that the amount actually payable under the plan does not amount to 40% or more of an officer's rate of salary at retirement, it is the intention of the Company (subject to certain qualifications and conditions) to make supplementary payments so that the total payments will aggregate at least 40% (or 30% in the case of payments to widows) of the officer's rate of salary at retirement. The Company is providing a reserve for the supplementary payments on a current basis.

- 8 The companies are obligated under repurchase and other agreements principally in connection with the financing of sales of products to consumers, and are defendants in suits and claims, which management believes will have no material effect on the business of the companies.

- 9 In March, 1972, a subsidiary, formed for the purpose of financing international operations, issued outside the United States and Canada \$25,000,000 of 8% guaranteed sinking fund debentures due in 1987. The annual sinking fund requirements will commence on March 1, 1977.



	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
<b>Sales and Other Revenues</b>	\$345,311,820	377,852,809	419,066,694	516,973,065	682,374,719	629,975,344	775,124,336	873,224,220	796,418,521	926,592,871
<b>Operating Income Before Income Taxes</b>	\$ 25,258,547	27,126,526	38,926,724	57,838,678	60,012,843	34,571,147	57,376,196	71,842,573	51,812,905	62,054,944
<b>Earnings From Operations</b>	\$ 12,192,862	12,926,526	20,666,724	31,838,678	32,952,843	18,816,147	28,261,196	33,792,573	25,662,905	31,749,944
<b>Earnings Per Share*</b>	\$ 1.01	1.07	1.71	2.62	2.70	1.54	2.30	2.74	1.93	2.37
<b>Working Capital</b>	\$ 96,804,189	92,358,852	107,625,939	118,014,680	128,158,542	131,358,227	176,414,238	235,593,386	222,116,986	247,578,983
<b>Net Investment in Plant &amp; Equipment</b>	\$ 54,783,818	67,283,543	67,836,835	81,082,588	127,219,219	136,962,787	145,581,706	167,499,524	174,530,015	184,218,891
<b>Shareholders' Equity</b>	\$111,835,713	120,735,367	137,533,422	165,002,282	192,598,273	206,286,381	238,778,071	326,134,470	344,085,266	375,897,253

\*Earnings per share are based on weighted average shares outstanding during the respective years, adjusted for share distributions.

The conversion of 4½ % debentures and the exercise of outstanding stock options would not result in a significant dilution of earnings per share.

Earnings per share shown above do not include 8¢ of non-recurring gain from sale of finance subsidiary in 1962 and 11¢ of non-recurring charge from discontinuance of color TV picture tube manufacturing operation in 1970.





## MAJOR FACILITIES

Chicago, Franklin Park, Quincy,  
Pontiac, and Schaumburg, Illinois

Phoenix, Scottsdale, Mesa  
and Tempe, Arizona

Fort Lauderdale, Florida

Arcade, New York

Midland and Toronto, Canada

Stotfold, England

Toulouse, France

Wiesbaden, Germany

Kowloon, Hong Kong

Tel-Aviv, Israel

Rome, Italy

Seoul, Korea

Guadalajara, Mexico City,  
and Nogales, Mexico

Vega Baja, Puerto Rico

East Kilbride, Scotland

Geneva, Switzerland

Taipei, Taiwan

## MAJOR PRODUCT LINES

### *Communications Division*

Mobile and portable FM two-way radio  
communications systems

Radio paging systems

Communications control centers

Visual communications systems

Signaling and remote control systems

Car telephone systems

Microwave communications systems

Hospital products and  
communications systems

Precision instruments

Component products

### *Semiconductor Products Division*

Digital integrated circuits  
(Bipolar, MOS and CMOS)

Linear integrated circuits

MSI/LSI integrated circuits  
(Bipolar and MOS)

Silicon and germanium power  
and small signal transistors

Silicon rectifiers and annular transistors

Field effect transistors

RF small signal and power transistors

Thyristors, varactors, hybrid devices

Zener and tuning diodes

Functional circuits, optoelectronics

### *Consumer Products Division*

Quasar color television

Monochrome television

Console and component audio products

Visual display monitors

### *Government Electronics Division*

Aerospace communications systems

Tactical radio and microwave  
communications systems

Radar systems, data links,  
and display systems

Range positioning and navigation systems

ASW tracking systems

Instrumentation products

Countermeasures systems

Missile guidance and drone systems

Electronic ordnance devices

### *Automotive Products Division*

Car radios

Tape players

Alternator charging systems

Electronic instrumentation

Solid state ignition systems

### *Corporate Marketing Units*

Electronic video recording (EVR) players  
and program material

Institutional electronic management  
and entertainment systems

Environmental, supervisory control,  
security and urban communications  
systems



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**MOTOROLA**

